

59TH MIDWEST FISH AND WILDLIFE CONFERENCE

*Managing Natural Resources:
Integrating Ecology and Society*

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A limited number of Abstracts books will be available for \$10.00 each.

34-06 Winter Home Range and Habitat Use of Female Ringed-necked Pheasants in Southeastern North Dakota

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In 1991, resource agencies began applying aquatic herbicide to reduce cattail densities (*Typha* spp.) in North and South Dakota wetlands. Rodeo® has been used on 5,000 ha of wetlands and treatments continue at 1,000 ha/year. Game managers are concerned about the rapid reduction in cattail cover and its potential effects on ring-necked pheasants (*Phasianus colchicus*), which often winter in residual cattail growth. Hence, basic ecological data are needed to estimate and mitigate possible impacts from intensive cattail management. From 1 December-20 March 1992-1995, we radio-tagged 100 female pheasants to investigate habitat use and survival; 69 birds provided data for analysis. Minimum convex polygon (100%) estimates on individual home ranges were 9 ± 8.0 ha (SD) in 1992-1993 and 30 ± 24.7 ha in 1994-1995. After pooling locations by capture site, estimates of 100% convex polygons were 61 ± 35.7 and 69 ± 38.8 ha in 1992-1993 and 1994-1995, respectively; 95% polygons were 0.5-0.3 smaller. Locations on 47 birds, pooled by capture site, were used for habitat use *vs.* availability analyses. The majority of locations ($n=503$) were in semipermanent wetlands (54%) and upland grasslands (31%). Pheasants preferred wetlands ($P's < 0.10$) at second- and third-order scales. Grasslands were preferred at the second-order scale during 1994-1995. The wetland-upland interface and the innermost area of the wetland were equally preferred at third-order scales. Lack of snow accumulation in mild winters probably allows pheasants to remain in CRP, indicating that larger wetlands may be preferred only when CRP no longer fulfills wintering requirements.



34-26 Response of Invertebrates to Herbicide-Induced Habitat Alterations in Wetlands

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Wetlands in the Prairie Pothole Region of eastern North Dakota are often dominated by cattails (*Typha* spp.), providing habitat for crop-depredating blackbirds and impeding use by waterfowl. Since 1991, resource agencies have aerially sprayed 5,000 ha of cattail-dominated wetlands with Rodeo® aquatic herbicide. Studies have documented that waterfowl and black tern (*Chlidonias niger*) breeding populations respond positively to herbicide treatment; whereas, blackbird (*Agelaius phoeniceus*) and marsh wren (*Cistothorus palustris*) numbers are negatively influenced. However, the consequences of using Rodeo® on aquatic invertebrates have not been documented in detail. In 1992 and 1993, we assessed the response of microinvertebrates and aquatic insects to a 70% reduction in cattail coverage with Rodeo®. One year post-treatment, numbers of Copepoda, Chydoridae, Ostracoda, Daphnia, Simocephalus, and Ceriodaphnia (i.e., microvertebrates) did not differ between treated and reference wetlands ($P's > 0.1$); however, corixid adults and the larvae of corixids and chironomids were more abundant in treated wetlands ($P's < 0.1$). In comparison, chaoborid larvae were more plentiful in reference wetlands ($P < 0.1$). Two years posttreatment, the treated wetlands contained more Ostracoda and adult corixids than did reference wetlands ($P's < 0.1$). This experiment shows that some microinvertebrates and insects respond positively to the increased interspersation of open water, live cattails, and dead cattails after treatment with Rodeo®; whereas, other taxa may be negatively influenced. Changes in abundance between treatments of some important invertebrate taxa were undetectable due to small sample sizes and high variability within treatments.

